

SU 308846 A

An apparatus for generating current pulses which have the peak in the vicinity of the back edge. The apparatus belongs to current sources of electro-erosion machines which are used for machining conductive materials.

It is known, that the utilisation of current pulses having the peak in the vicinity of the back edge increases the performance of the electro-erosive machining. The generation of such pulses is possible by means of broad-band pulse generators which, however, have a disadvantage of being complicated and expensive. The apparatus to be described differs from the known one in that the pulse forming block is implemented from several parallel chains in order to simplify the design. Each of these chains consists of a controlled diode and a ballast element, for example a resistor, which are coupled in series.

Fig. 1 shows a schematic view of the apparatus;

Fig. 2 is a graphical representation of the pulse form.

The apparatus comprises a current pulse source 1, which is coupled via the pulse forming block to the gap 2. The pulse forming block consists of several chains, wherein each consists of controlled diodes 3, 4 and ballast elements, for example resistors 5, 6, which are coupled in series. The starting block 7 serves for controlling the diodes. Each known generator may be used as current pulse source, for example the machining generator or static generator or transformer, coupled to the AC power source.

The apparatus functions as follows:

The pulse is supplied from the source 1 via controlled diode 3 and resistor 5 to the gap 2. The pulse form in the gap corresponds either to the pulse form of the source 1 or may be varied by delaying the start time of the diode 3. When being supplied from the transformer the diodes also perform the rectification of the current. At the end of the current pulse which flows through the chain implemented by the diode 3 and the resistor 5 the controlled diode 4 is opened by the pulse of the starting block 7. The current pulse which flows through the chain, diode 4 - resistor 6, heterodynes the preceding pulse whereby a pulse is created in the gap (see fig. 2). The relation of the currents i_1 and i_2 is determined by the relation of the values of the resistors 5 and 6, and the pulse duration τ and the duration of the peak τ_1 are correspondingly determined by the start times of the controlled diodes 3 and 4. For simplifying the apparatus the controlled diode 3 might be omitted. In this case, the pulse duration τ_1 is determined by the pulse duration, which is given by the current source 1.

Claims

Apparatus for creating current pulses having the peak in the vicinity of the back edge which is equipped with a pulse forming block, which is coupled between the current pulse source and the gap, characterised in that the pulse forming block is implemented by means of several parallel chains, which each consists of a controlled diode and a ballast element, for example resistor, coupled in series in order to simplify the design.